



SANYO Semiconductors

DATA SHEET

2SC6112 — NPN Triple Diffused Planar Silicon Transistor

Switching Regulator Applications

Features

- High breakdown voltage and high reliability.
- Ultrahigh-speed switching.
- Wide ASO.
- Adoption of MBIT process.

Specifications

Absolute Maximum Ratings at $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		1000	V
Collector-to-Emitter Voltage	V_{CEO}		500	V
Emitter-to-Base Voltage	V_{EBO}		7	V
Collector Current	I_C		15	A
Collector Current (Pulse)	I_{CP}	$PW \leq 300\mu\text{s}$, duty cycle $\leq 10\%$	25	A
Collector Dissipation	P_C		1.75	W
		$T_c=25^{\circ}\text{C}$	55	W
Junction Temperature	T_J		150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics at $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=500\text{V}$, $I_E=0\text{A}$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}$, $I_C=0\text{A}$			10	μA
DC Current Gain	h_{FE1}	$V_{CE}=5\text{V}$, $I_C=1.2\text{A}$	40		80	
	h_{FE2}	$V_{CE}=5\text{V}$, $I_C=6\text{A}$	8			
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}$, $I_C=1.2\text{A}$		18		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}$, $f=1\text{MHz}$		80		pF

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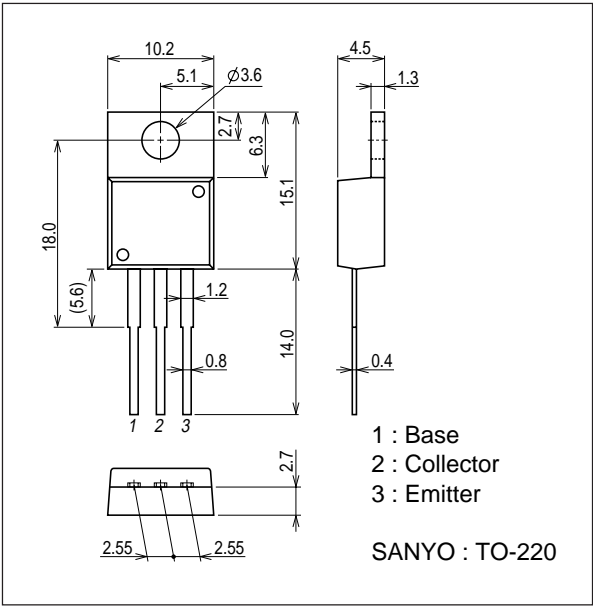
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=6A, I_B=1.2A$			1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=6A, I_B=1.2A$			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0A$	1000			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5mA, R_{BE}=\infty$	500			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0A$	7			V
Collector-to-Emitter Saturation Voltage	$V_{CEX(sus)}$	$I_C=2.5A, I_{B1}=-I_{B2}=I_C=7A, L=1mH, \text{clamped}$	500			V
Turn-ON Time	t_{on}	$V_{CC}=200V, 5I_{B1}=-2.5I_{B2}=I_C=7A, R_L=50\Omega$			0.5	μs
Storage Time	t_{stg}	$V_{CC}=200V, 5I_{B1}=-2.5I_{B2}=I_C=7A, R_L=50\Omega$			3.0	μs
Fall Time	t_f	$V_{CC}=200V, 5I_{B1}=-2.5I_{B2}=I_C=7A, R_L=50\Omega$			0.3	μs

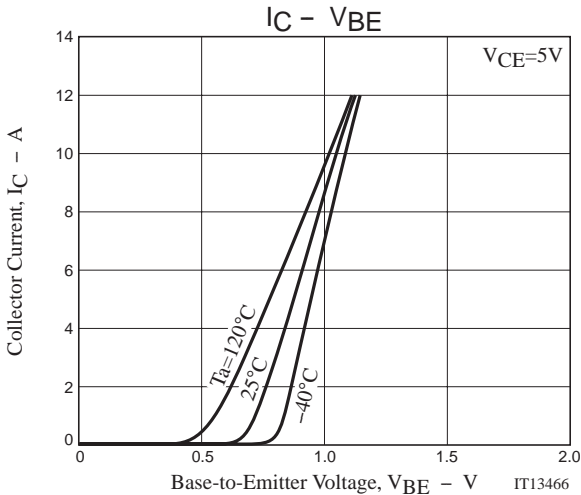
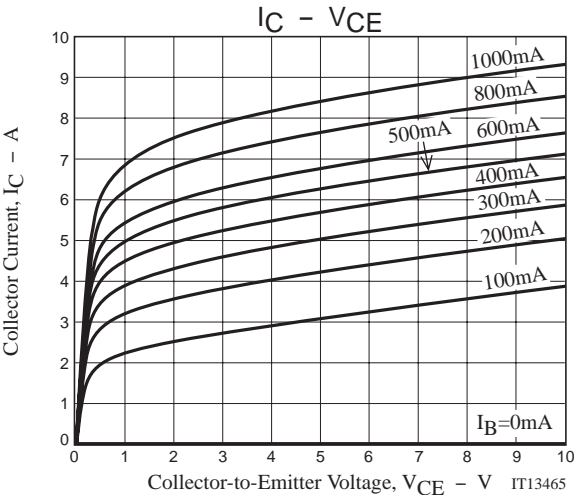
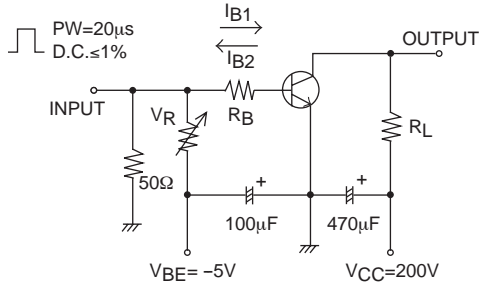
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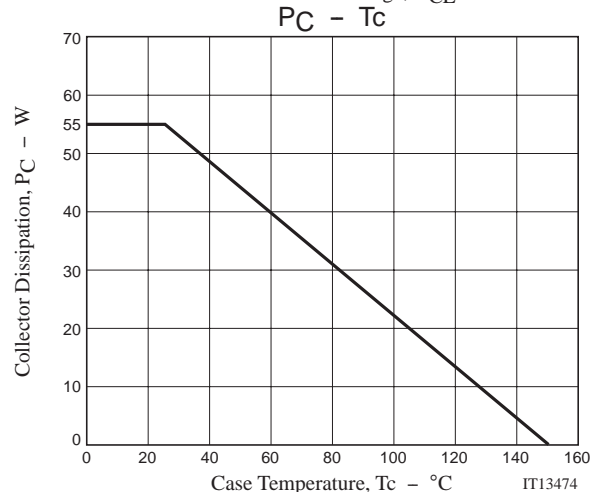
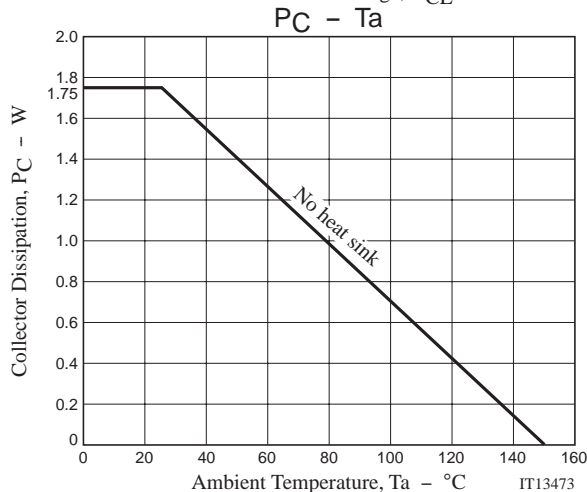
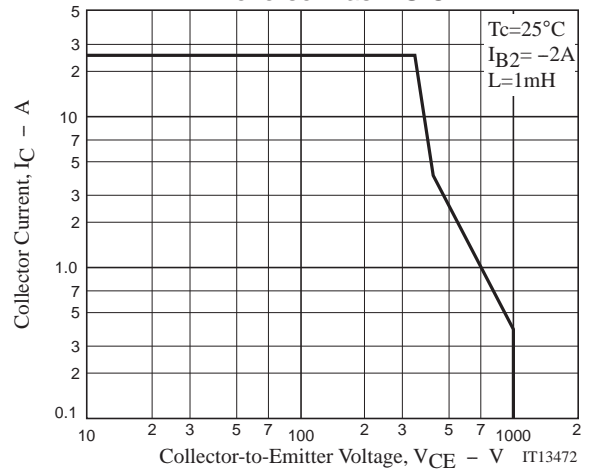
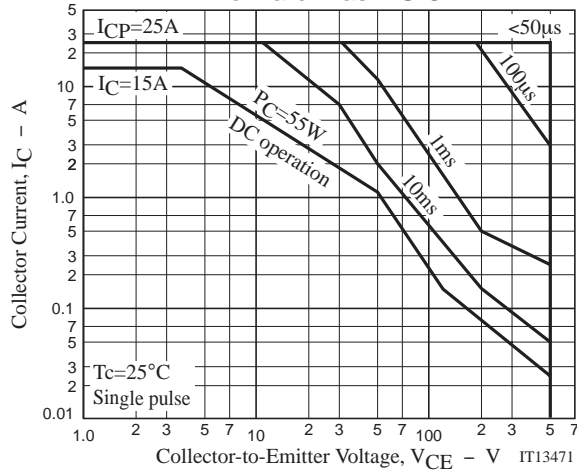
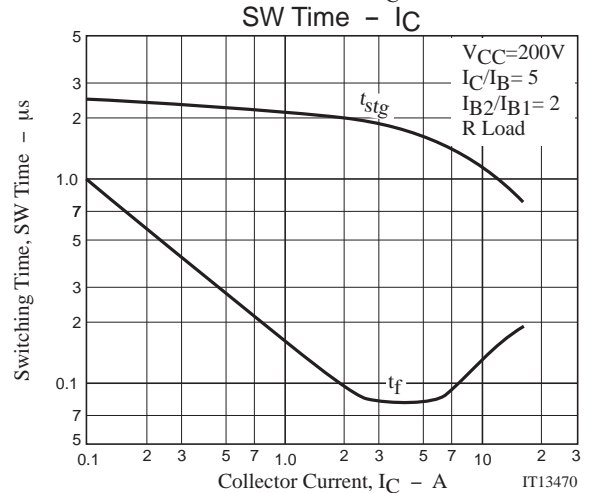
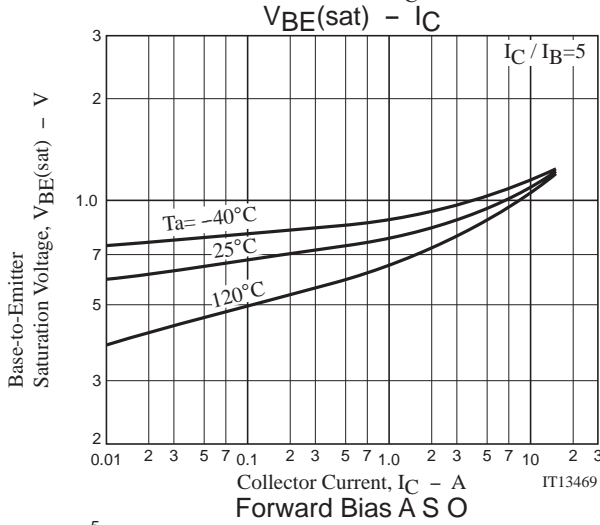
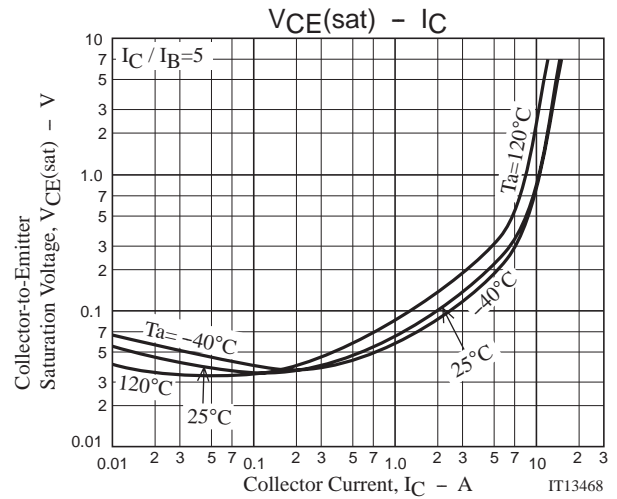
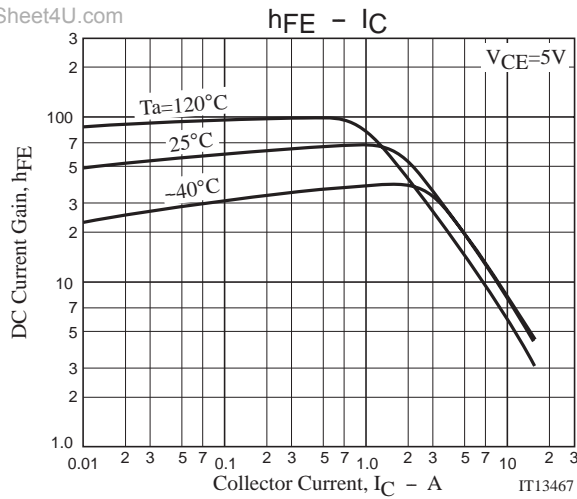
unit : mm (typ)

7507-001



Switching Time Test Circuit





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